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ABSTRACT

An interest in conditions of practice and feedback led to a study which examined the effect on writing by elementary school students of (1) two types of practice, both similar to "free focused writing"; (2) practice at a frequency greater than once a week; and (3) a procedure by which students measured their own performance and provided themselves with feedback. Subjects were 130 second, third, and fourth grade students from six schools, along with six teachers. Both treatment groups wrote for 15 minutes, three times a week, for 10 weeks and completed 5 pretreatment and 5 posttreatment exercises (which took two weeks), for a total of 12 weeks of writing. After each exercise, students counted the number of words they had written (regardless of errors) and recorded the total on a graph; the count was considered self-provided feedback as there was no teacher or peer feedback. There were no restrictions or suggestions on mode of writing, but students were given a sequence of general subjects and were permitted to move to another subject after writing on one. Results showed significant gains in both treatment groups, for groups of boys and girls, and for different grade levels in fluency, spelling, and other matters of correctness in wording. Significant gains were also found in some but not all aspects of sentence complexity and no differences were found between groups provided verbal and visual stimuli. (HOD)

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Practice and Feedback in Elementary School Writing Instruction

In Teaching the Universe of Discourse, Moffett (1968) identifies two conditions for learning to write: practice and feedback. Students learn by writing and by receiving responses to what they have done. These responses are feedback in the sense that they serve as "information a learner receives as a result of his trial," which the learner "heeds" in adjusting subsequent trials (pp. 188, 189). The very simplicity of this view would provoke numerous questions, if not skepticism. Burton et al. (1975), for example, caution teachers who "fall back on the truism that practice makes perfect while forgetting another and possibly just as valid truism that practice makes permanent" (p. 110). Moffett's emphasis on peer-feedback over responses from teachers would also be questioned.

This study was motivated by an interest in conditions of practice and feedback. Specifically, the authors studied the effect on writing by elementary school students of (1) two types of practice, both similar to "free focused writing," as described by Macrorie (1968), (2) practice at a frequency greater than once a week, and (3) a procedure by which students measure their own performance and thus provide themselves with feedback.

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Insights from Research

Frequency of Writing

Presumably, all previous experimental research in writing instruction involved variables of feedback and practice. In most cases, however, the focus was on some other aspect of instruction, such as the effects (1) of instruction in formal grammar and (2) of revision (reviewed by Braddock et al., 1963), (3) of sentence-combining practice (reviewed and conducted by O'Hare, 1973), and (4) of pre-writing strategies (Rohman and Wlecke, 1964; Odell, 1974). A number of studies have investigated the effect of frequency of practice. These studies (reviewed by Sherwin, 1969 and Bamberg, 1978), found no significant differences favoring groups who wrote more often than a control group or other treatment groups.

As Burton et al. (1975) note, the research casts doubt on the idea that practice, whatever its frequency, results in improvement. However, the authors, with the advantage of hindsight, would question four instructional (and experimental) conditions: frequency, level of proficiency expected, type of writing done for practice, and feedback students received.

First, in the studies reviewed by Sherwin (1969) and Bamberg (1978), the highest frequency was only once a week. Perhaps practice must occur more often; proficiency in music and athletics, after all, seems to require almost daily

practice. Second, the researchers' expectations for improvement may have been unreasonably high; in general, they looked for a significant reduction in errors accompanied by achievement of qualities in content, organization, and style found in superior adult writing.

Third, one can question the type of writing students did and the precise conditions under which they practiced. Braddock et al. (1963) discuss the importance of considering the "assignment variable, with its four aspects: the topic, the mode of discourse, the time afforded for writing, and the examination situation" (p. 7). Generally, it appears that students were expected to do a one-hour, impromptu essay. This assignment seems to the authors to be more a demanding test of ability than a form of practice to develop ability.

Variety and Freedom in Practice

A selective review of studies which found positive results suggests that practice must provide for more variety and freedom than that afforded by the impromptu essay. For example, in a major study by Harris (1962), elementary children showed improvement given a variety of types of writing, including essays and narratives, along with prewriting activities and weekly practice over a two-year period. In Odell's study (1974), essay writing was the form of practice, but the college students did the writing out of class,

chose their own subjects, and had in-class instructional activities in pre-writing strategies.

In all the studies referred to so far, practice was synonymous with composing. Students wrote in one or more modes and were expected to produce a complete composition with particular qualities of content, form, and style. There are other possibilities for practicing writing. Effective practice can consist of exercises or drills in one aspect of writing, such as frequent, systematic sentence-combining exercises (O'Hare, 1973).

A third type of practice lies between the complete composition and drill on an isolated aspect of writing. Macrorie (1968) describes such practice as "free" and "free focused writing." With both, students write for a set time, from 10 to 20 minutes. They are not expected to produce a complete composition nor to meet standards for good writing. With "free" writing, students write whatever comes to mind; with "free focused," they try to stay on one subject, but can move to a related subject. In Macrorie, the intent of such practice is to develop honesty, naturalness, and freshness of style and content. Such practice may also develop fluency, which Lamberg (1978) defines as speed and ease in transcribing thoughts into written language.

Purves (1976) recommended that "free writing" be investigated as an experimental variable, but the authors have

found no studies which have done so. Wilhelm (1972) recommended daily, free writing exercises which initially emphasize gains in fluency. In two studies, Stoner et al. (1972) employed daily, but not free, writing of about 10 minutes, for 30 days and 26 days, but their emphasis was on reduction in errors. There was no concern for fluency; in fact, students were limited to writing about 50 words each practice.

Feedback

So far, the authors have attempted to show that previous research concerned with practice has not fully investigated all possible experimental variables or conditions, those involving fluency, the type of writing students do, and the aspects of writing students are expected to show improvement in. A fourth consideration is feedback. Wolter and Lamberg (1977) reviewed 25 studies in an investigation of effects of feedback. They employed a general definition of feedback: information on a performance which affects subsequent performance (Olds, 1970; Brethower, 1970; Smith, 1976).

Whereas Moffett (1968) discussed feedback as responses from a reader to a writer (as with peer-feedback), Wolter and Lamberg also considered the possibility of "self-provided feedback." Here the writer is given some means of measuring his or her own performance; this measurement yields information which can be considered feedback if it affects subsequent

performance. (Self-provided feedback is more common in reading instruction, in which students might check their own answers to determine percentage of comprehension and compute their own rate of reading.)

Lamberg and Wolter found two studies which showed no significant differences between the effects of peer and teacher-feedback (Allen and Sutton, 1963; Pierson, 1967) and two studies which reported greater gains with peer than with teacher-feedback, though significance was not reported (Lagana, 1972; Ford, 1973). Millet (1969) and Sager (1973) found significant differences for groups trained to use rating scales to measure their own and their peers' writing, over control groups who received no feedback. In his own study, Wolter (1975) found no significant differences between the performance of students providing themselves with feedback and of those receiving feedback from teachers. Both self-provided and teacher-feedback groups showed significant pre-post gains and significant differences over a no-feedback control group. Feedback consisted of number of words written in each composition and number of basic questions answered to some extent in each (What happened? When did it happen? and so forth).

When students are asked to give themselves or their peers feedback, a number of factors may come into play. First, the researcher must select in advance of the study

the type of feedback to provide and as a result may choose feedback directly related to, and helpful for, the type of practice. Second, students are informed early in the study of the feedback and, therefore, have a clear idea of what aspects of writing will be emphasized and valued. Third, the use of a graph, checklist or scale provides for consistency in the feedback. Fourth, feedback will be more immediate than if students have to depend on the teacher to read and comment on all papers.

Method

Subjects

Involved in this study were 130 second, third, and fourth grade students from six schools, along with six teachers, who were taking a graduate course in elementary language arts. The schools were located in lower and middle economic areas of a city in the southwest. Various constraints on involving children and schools in research prevented a randomized sample. Subjects were divided into two treatment groups of 67 and 63, each with one class of second, third, and fourth graders.

Treatment

Both treatment groups had the following experiences. They wrote for 15 minutes, three times a week, for ten weeks and completed five pre- and five post-treatment exercises (which took two weeks), for a total of twelve weeks of writing.

There were no restrictions or suggestions on mode of writing, but students were given a sequence of general subjects, presented in Table 1. After each exercise, students counted the number of words they had written (regardless of errors) and recorded the total on a graph (which showed changes from one practice to another). The count of words was considered self-provided feedback. There was no teacher or peer-feedback.

Insert Table 1 about here

Both treatment groups did exercises similar to Macrorie's free focused writing. As explained earlier, they were encouraged to write as much as they could on one subject, but were permitted to move onto another subject. One group was simply told the subject to write about and then had to write solely from memory and/or imagination. The other group was provided with photographs of examples of the subjects as a concrete or visual, rather than solely verbal, stimulus. They were not restricted to doing an accurate description of the picture.

Data Collection

Data were collected by measuring five pre- and five post-treatment exercises, each 15 minutes. Both treatment groups were provided with copies of the same pictures, with one picture for each exercise. Pictures were of children engaged in common activities, such as riding a bicycle.

Performance on each exercise was scored; then the scores were averaged on the set of five exercises for each student. Thus, each subject had an average score for before and after treatment. Braddock et al. (1963) recommend against reliance on one pre- and post-test sample. A total of 1,300 samples of writing were analyzed.

Predictions

Increases were predicted in seven dependent variables, listed in Table 2, representing three aspects of writing: fluency, correctness, and syntactic complexity. Fluency (speed and ease of transcribing thoughts) was measured indirectly, by a count of total words written in an exercise, regardless of errors (as recommended by Wilhelm, 1972). It was assumed that an increase in quantity in a constant amount of time indicated an increase in fluency.

Insert Table 2 about here

Correctness was measured in three ways. First, total words spelled correctly in each 15 minute exercise were counted. Second, a count was made of words spelled correctly which were also correct in other ways (capitalization, possession, and agreement between subjects and verbs and pronouns and antecedents). For ease and consistency in scoring, "correctness" was equated with rules of usage and punctuation

for standard written English. Third, a count was made of sentences punctuated correctly (beginning, end, and internal punctuation).

Syntactic complexity was measured in three ways: (1) average words per t-unit, as defined by Hunt (1965), for a 15-minute exercise, (2) number of simple sentences with two or more phrases (suggested by Harris, 1963), and (3) number of modifiers (suggested by Wilhelm, 1972). A simple frequency count was used, with each item receiving one point. For modifiers, an entire phrase was given one point, whereas each single-word modifier outside of a phrase received one point. There would be two points for Two boys ran up to me.

Analysis of Data

An analysis of variance and t-tests were run to measure pre- and post-treatment differences and pre-to-post changes for the two treatment groups. In addition, t-tests were run to measure effects of sex and grade levels. A level of .05 was selected as statistically significant.

Results

An analysis of variance revealed no significant differences between pre-treatment scores and none between post-treatment scores, for the two treatment groups, as shown in Tables 3 and 4. A comparison of pre- and post-treatment scores for the group without pictures showed significant

increases in all variables, except number of simple sentences with two or more phrases, as presented in Table 5. A comparison of pre- and post-treatment scores for the groups with pictures showed significant increases in all variables, except average t-unit length and number of simple sentences with two or more phrases, as presented in Table 6.

Insert Tables 3, 4, 5, & 6 about here

A comparison of scores of all boys (both treatment groups) with those of all girls showed no significant differences before and after treatment on all variables but one. Girls had significantly more correct sentences on the post-treatment exercises than did boys. Tables 7 and 8 present the data.

Insert Tables 7 & 8 about here

A comparison of pre- and post-treatment scores for each grade level revealed significant increases for all grades in total words, total correctly spelled words, and total words without other errors. With variables of sentence structure and punctuation, there were mixed results. Second graders had significant increases in t-unit length and correctly punctuated sentences; third graders, in the same two variables plus number of modifiers. Fourth graders

had significant gains in sentences with two or more phrases and in modifiers.

Conclusions

In this study, predictions were made for increases in particular behaviors believed indicative of fluency, correctness, and syntactic complexity. Significant gains were found in both treatment groups, for groups of boys and girls, and for different grade levels, in fluency (as measured by quantity), spelling, and other matters of correctness in wording. Significant gains were also found in some but not all aspects of sentence complexity and punctuation. No differences were found between groups provided verbal and visual stimuli (pictures).

An interpretation of the findings is suggested by Smith's (1976) discussion of feedback. Smith would argue that information can operate as feedback, that is, can affect subsequent performance, by influencing students' attention to particular behaviors involved in the performance. When students count number of words, they are not merely being reinforced to write more, but are being influenced to attend to the words they write; thus, the increases in both quantity and correcness. The increase in quantity might lead, as it apparently did with some students, to an increase in syntactic complexity; however, since there was no feedback on sentence structure, the mixed results might be expected.

Implications of the study are that certain conditions of practice and feedback can have certain positive effects on the writing of elementary children: practice at a frequency greater than once a week, a variety of subjects, free focused writing, and self-provided feedback. Subjects for writing can be simply stated or can be illustrated in pictures. Many questions are suggested for both further analysis of the writing samples and for further experimental studies: (1) whether there are patterns of errors made in free writing by different grade levels, (2) whether particular errors were self-corrected, (3) whether there was improvement in qualities of content and form, (4) whether similar gains would be found with older students, (5) whether the gains revealed in the free writing would "transfer" to compositions, (6) whether there would be greater gains from peer-feedback or (7) from a combination of self-provided and peer-feedback, and (8) whether there would be greater gains with a combination of free writing and sentence-combining practice.

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Table 1

Schedule for General Subjects

Week	Subjects
1	pre-treatment pictures of children
2	people and animals
3	people and animals
4	objects and machines
5	objects and machines
6	objects and machines
7	objects and machines
8	people
9	people
10	scenes in school
11	scenes in the neighborhood
12	post-treatment pictures of children

Table 2

Dependent Variables

1. Total words with and without errors.
2. Total correctly spelled words.
3. Correctly spelled words without other errors (in capitalization, possession, subject-verb agreement, pronoun reference.
4. Average number of words per T-unit.
5. Simple sentences with two or more phrases.
6. Total correctly punctuated sentences
7. Total modifiers (single word modifiers and modifying phrases.

Table 3

Analysis of Variance of Scores of Two Groups Before Treatment

Variable	Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Total words	Between	1	589.19	1589.19	1.48	35
	Within	128	45396.29	354.66		
	Total	129	46985.48			
Words	Between	1	488.39	488.39	1.41	.24
Spelled	Within	128	44318.95	346.24		
Correctly	Total	129	44807.34			
Words	Between	1	673.94	673.94	2.11	.15
Without	Within	128	40815.12	318.87		
Other Errors	Total	129	41489.06			
Average Words/	Between	1	3.17	3.17	.41	.51
T-Unit	Within	128	1000.25	7.45		
	Total	129	1004.59			
Sentences	Between	1	.22	.22	1.41	.24
With 2 or	Within	128	19.74	.15		
More Phrases	Total	129	19.96			
Sentences	Between	1	8.73	8.73	1.78	.18
Correctly	Within	128	627.63	4.90		
Punctuated	Total	129	636.36			
Total	Between	1	124.01	124.01	1.89	.17
Modifiers	Within	128	8405.28	65.67		
	Total	129	8526.29			

Table 4

Analysis of Variance of Scores of Two Groups After Treatment

Variable	Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Total Words	Between	1	268.76	268.76	.15	.70
	Within	128	229453.86	1792.60		
	Total	129	229722.62			
Correctly Spelled Words	Between	1	345.13	345.13	.23	.64
	Within	128	195358.34	1526.24		
	Total	129	195703.47			
Words Without Other Errors	Between	1	5.59	5.59	.00	.95
	Within	128	182275.72	1424.03		
	Total	129	182281.31			
Average Words/ T-Unit	Between	1	3.28	3.28	.42	.52
	Within	128	1005.49	7.86		
	Total	129	1008.77			
Simple Sentences With 2 or More Phrases	Between	1	.69	.69	1.35	.25
	Within	128	65.44	.51		
	Total	129	66.13			
Correctly Punctuated Sentences	Between	1	12.63	12.63	1.23	.27
	Within	128	1312.60	10.25		
	Total	129	1325.23			
Total Modifiers	Between	1	17.78	17.78	.18	.68
	Within	128	13039.23	101.87		
	Total	129	13057.01			

Table 5

Scores for Group Without Pictures

Before and After Treatment (N = 67)

	Pre $\bar{x}$	S.D.	Post $\bar{x}$	S.D.	t
Total Words	44.54	20.76	80.86	37.97	9.43*
Words Spelled Correctly	39.33	19.39	74.49	35.49	9.55*
Words Without Other Errors	36.52	19.01	71.36	33.85	10.16*
Average Words/ T-unit	8.24	3.03	9.19	2.27	2.18**
Simple Sentences with 2 or More Phrases	.35	.43	.57	.87	1.91
Correctly Punctuated Sentences	2.71	2.35	3.61	3.03	2.55**
Total Modifiers	12.47	9.96	16.52	8.10	2.81**

*$p < .001$

**$p < .05$

Table 6

Scores for Group With Pictures Before and After Treatment (N = 63)

	Pre $\bar{x}$	S.D.	Post $\bar{x}$	S.D.	t
Total Words	37.55	16.54	83.73	46.54	7.48*
Words Spelled Correctly	35.45	17.74	77.39	42.55	7.54*
Words Without Other Errors	31.97	16.54	71.77	41.48	7.60*
Average Words/ T-unit	9.21	4.49	9.51	3.28	1.64
Simple Sentence with 2 or More Phrases	.27	.35	.42	.50	1.94
Correctly Punctuated Sentences	2.19	2.07	2.99	3.37	2.43**
Total Modifiers	10.52	5.47	17.26	11.85	4.48*

*$p < .001$

**$p < .05$

Table 7

Scores for Boys and Girls

Before Treatment

	Boys N = 64		Girls N = 66		
	$\bar{x}$	S.D.	$\bar{x}$	S.D.	t
Total Words	38.04	18.28	44.46	19.51	1.94
Words Spelled Correctly	34.49	17.95	40.59	18.98	1.88
Words Without Other Errors	32.04	16.91	36.74	18.80	1.50
Average words/ T-unit	9.17	4.23	9.59	4.86	.53
Simple Sentences With 2 or More Phrases	.29	.34	.33	.44	.50
Correctly Punctuated Sentences	2.33	2.12	2.59	2.33	.66
Total Modifiers	11.51	10.08	11.54	.98	.02

Table 8

Scores for Boys and Girls

After Treatment

	Boys N = 64		Girls N = 66		
	$\bar{x}$	S.D.	$\bar{x}$	S.D.	t
Total Words	76.12	44.35	88.77	39.08	1.72
Words Spelled Correctly	69.38	39.31	82.44	37.71	1.93
Words Without Other Errors	65.46	37.12	78.04	37.29	1.9[illegible]
Average Words/ T-Unit	9.38	2.90	9.31	2.71	.13
Simple Sentences With 2 or More Phrases	.47	.82	.53	.58	.55
Correctly Punctuated Sentences	2.68	2.76	3.98	3.52	2.36*
Total Modifiers	16.12	10.96	17.67	9.02	.88

*$p < .05$